PR24

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LONG-TERM STRATEGY TABLE COMMENTARY

NES_COM9

1. LS1

Our forecast to 2050 are built on a number of considerations, including:

- Our Long-term strategy ambitions – for example, we propose to achieve an ITS 3 hrs performance of two minutes by 2050, and a 50% reduction on all pollutions by 2040 (from a 2021-22 baseline).
- We apply the pathway agreed in our WRMP for leakage, per capita consumption and non-household demand.
- We apply the agreed outputs from our DWMP published June 2023, including internal and external sewer flooding.
- Where the regulator requires maximum compliance, we set the performance to that compliance level, this included CRI, Discharge compliance and serious pollutions.

Reviewing the measures that did not align with the categories above:

- Bathing water quality utilises the planning class scenario, any changes to the list of included bathing waters in this measure will reflect a potentially different pathway at the time of their inclusion or exclusion.
- Storm Overflows - Our long-term path is set to achieve the regulatory goal of an average of 10 spills by 2040.
- For our asset health metrics, we have only forecasted performance to 2034/35, as we are committed to developing the AMMA approach to determine the health of company assets in the future.
- Wastewater network storage volume delivered or avoided – utilised the “preferred option” from out DWMP June 2023.

2. LS2

Our forecast to 2050 are built on a number of considerations, including:

- Our long-term strategy ambitions – for example, we propose to achieve an ITS 3 hrs performance of two minutes by 2050, and a 50% reduction on all pollutions by 2040 (from a 2021-22 baseline).
- We apply the pathway agreed that reflects base in our WRMP for leakage, per capita consumption and non-household demand.
- We apply the agreed outputs from our DWMP published June 2023, including internal and external sewer flooding, with our base strategy including a deterioration in relation to internal sewer flooding due to climate change and urban creep as detail in the DWMP.
- Our regulators require maximum performance against three metrics, CRI, serious pollutions and discharge compliance. Whilst we agree those targets, we do not expect to achieve maximum compliance under base for CRI by 2050, with a score of 0.6 forecasted, however this remains a significant improvement from current performance.

Reviewing the measures that did not align with the categories above:

- Bathing water quality utilises the planning class scenario, any changes to the list of included bathing waters in this measure will reflect a potentially different pathway at the time of their inclusion or exclusion.

- In relation to Storm Overflows, we continue the pathway whereby the existing base is maintained to achieve 20 average spills throughout the period.
- For our asset health metrics, we have only forecasted performance to 2034/35, as we are committed to developing the AMMA approach to determine the health of company assets in the future.
- Finally, we do not forecast any improvements under base in relation to Wastewater network storage volume delivered or avoided and supply-side scheme benefits.

3. LS3 TO 3I, 4-4I

An explanation of why investment required under alternative pathways in the 2025-30 period is not included in the core pathway;

For the period 2025-30 the only variations in costs between alternative pathways are driven by investments identified through the WRMP and DWMP strategic planning processes.

Our WRMPs identify an 'Ofwat core' plan that we have included in the Long-term strategy core plan. The Technological advance scenario includes the WRMP investments under our preferred / best value / least cost WRMP plans.

Our DWMP considers accelerated and delayed pathways for storm overflow discharge reduction, which impact costs in 2025-30. Our core pathway for this investment in the Long-term strategy includes the preferred plan from our DWMP as the core and preferred plan are the same in our DWMP.

Explanation of whether any costs have been proportionally allocated between expenditure categories in tables LS3-LS3i and LS4-LS4i, including how much has been subject to proportional allocation and the cost drivers used. Explanation of how the alternative pathways presented in a company's longterm delivery strategy align with pathways a-i.

LS3 2020-25 expenditure

Costs for 2020-25 are the sum of CW3 costs for 2022/23, 2023/24 and 2024/25 and APR costs mapped to the CW3 cost categories for 2020/21 and 2021/22.

LS3 2025-30 expenditure

All expenditure is matched to table CW3.

LS3 2030-50 expenditure

Ensuring sustainable water supplies expenditure for the core pathway (LS3) is allocated across lines LS3.13 to LS3.30 based on the proportion of expenditure in each line for 2025-30. For some cost lines, delivery of all interventions is expected by a set date.

Error! Reference source not found. sets out which lines either have dates prior to 2049/50 after which we would not expect further enhancement investment requirement.

TABLE 1: REQUIRED INTERVENTION DATES – WATER

Expenditure line	Reference	Date after which no further expenditure allocated
Water enhancement totex (core pathway); Replacement of existing basic meters with AMR meters for residential customers	LS3.20	31 March 2035
Water enhancement totex (core pathway); Replacement of existing basic meters with AMI meters for residential customers	LS3.21	31 March 2035
Water enhancement totex (core pathway); Replacement of existing AMR meters with AMI meters for residential customers	LS3.22	31 March 2035
Water enhancement totex (core pathway); Replacement of existing basic meters with AMR meters for business customers	LS3.23	31 March 2035
Water enhancement totex (core pathway); Replacement of existing basic meters with AMI meters for business customers	LS3.24	31 March 2035
Water enhancement totex (core pathway); Replacement of existing AMR meters with AMI meters for business customers	LS3.25	31 March 2035

Restoring and enhancing the local environment expenditure for the core pathway (LS3) is allocated across lines LS3.1 to LS3.12 based on the proportion of expenditure in each line for 2025-30. We expect all these areas to continue to require investment to 2049/50.

Resilience expenditure is allocated to LS3.36. Note this investment relates to further asset health investment, but not to the specific enhancement case set out in lines CW3.130 and CW3.131.

Net Zero costs (LS3.39) are directly allocated from those estimated in our Long-term strategy model (NES_LTDS9).

Because a proportional allocation approach has been used, these figures will not match the detailed breakdown of expenditure in the WRMPs.

LS3a-LS3v expenditure all years

For tables LS3a – LS3v we have allocated the additional costs relative to the core pathway from our modelled totex overlays as set out in Table 2. Where an overlay is allocated to more than one line, it is split across those lines in accordance to the share of expenditure of each of those lines in 2025-30, subject to the restrictions on the last date enhancement expenditure is allowed set out in **Error! Reference source not found.**. Table 2 also specifies how the totex overlays map to the alternative investment pathways set out in section 3.9 and 3.10 in our Long-term strategy (NES_LTDS).

TABLE 2: ALLOCATION OF TOTEX OVERLAYS TO EXPENDITURE LINES - WATER

Table	Alternative pathway	Totex overlay	Allocation
LS3a	*	WRMP - Low Demand	LS3a.16

Table	Alternative pathway	Totex overlay	Allocation
LS3b	*	WRMP - Fast Technology	LS3b.16
LS3c	*	WRMP - Low Abstraction Reductions (Low ED)	LS3c.16
LS3d	*	WRMP - Low Climate Change	LS3d.16
LS3e	*	WRMP - Central (Least Cost / Best Value)	LS3e.16
LS3f	*	WRMP - High Climate Change	LS3f.16
LS3g	*	WRMP - Slow Technology	LS3g.16
LS3h	*	WRMP - High Demand	LS3h.16
LS3i	*	WRMP - High Abstraction Reductions (High ED)	LS3i.16
LS3j	*	WRMP - Best Environment	LS3j.16
LS3k	*	WRMP - High PCC	LS3k.16
LS3l	*	WRMP - North Suffolk Reservoir	LS3l.16
LS3m	*	WRMP - Habs Regs SR	LS3m.16
LS3n	6B	WRMP - Tees to York transfer	LS3n.16
LS3o	8B	Environment - Future environmental challenges - water	LSo.15 (Investigations on microplastics and air pollution) LS3o.32 (Microplastics) LS3o.46 (Air pollution)
LS3p	12B	Resilience - 80% increase in asset health expenditure - water	LS3p.39
LS3q	12C	Resilience - 123% increase in asset health expenditure - water	LS3q.39
LS3r	9B	Resilience - Technology step change - water Resilience - Additional cyber resilience - water	LS3r.39 (Resilience) LS3r.41 (Cyber security)
LS3s	13B	Net Zero - Accelerated pathway - water	LS3s.42
LS3t	13C	Net Zero - Delayed pathway - water	LS3t.42
LS3u	14B	Delayed lead replacement - water	LS3u.34 LS3u.35 LS3u.36 LS3u.37 LS3u.38 (Proportional allocation)

* These pathways combine choices across water supply investments for decisions 1, 2,3 and 4 in line with our WRMPs, as set out in Annex 2: Plausible futures scenario analysis – Table 6: Water resource investments under plausible futures

scenarios and Annex 3: Common reference scenario analysis - Table 13: Water resource investments under common reference scenarios.

Note that as scenario 5B: 'Demand on Teesside grows faster than other regional non-household demand' only impacts on our activities by changing the amount of water available for export, and so influencing the probability of following alternative pathways 6A, 6B and 6C – relating to if and where we export to. Because of this, no overlay is included in our Long-term strategy model for this alternative pathway and so no alternative pathway table is included in our business plan table submission. We have also not included a table for option 6C (Kielder reservoir to United Utilities (UU) transfer) as this similarly has zero expenditure. (The costs of delivering this transfer would be born by UU's customers.

LS4 2020-25 expenditure

Costs for 2020-25 are the sum of CWW3 costs for 2022/23, 2023/24 and 2024/25 and APR costs mapped to the CW3 cost categories for 2020/21 and 2021/22.

LS4 2025-30 expenditure

All expenditure is matched to table CWW3 for LS4.

LS4, 2030-50 expenditure

Expenditure for 'Restoring and enhancing the local environment' is proportionally allocated between cost lines where expenditure is still valid in the given year, based on each line's share of costs in 2025-30. For some cost lines, delivery of all interventions is required by a set date, for example stipulated by the Environment Agency. Cost lines are considered valid until but not after this date, for relevant interventions.

There is a further set of investment lines where we have limited / no planned interventions and do not expect to have interventions in future. We do not allocate future expenditure to these lines.

For all other interventions costs will continue to be allocated throughout the period to 2049/50.

Because a proportional allocation approach has been used, these figures will not match the detailed breakdown of expenditure in the DWMP.

Error! Reference source not found. sets out which lines either have dates prior to 2049/50 after which we would not expect further enhancement investment requirement or where we do not expect any enhancement investment to be required after 2029/30.

TABLE 3: REQUIRED INTERVENTION DATES – WASTEWATER

Expenditure line	Reference	Date after which no further expenditure allocated
Wastewater enhancement totex (core pathway); Event duration monitoring at intermittent discharges	LS4.1	31 December 2026
Wastewater enhancement totex (core pathway); Flow monitoring at sewage treatment works	LS4.2	31 December 2026
Wastewater enhancement totex (core pathway); Continuous river water quality monitoring	LS4.3	May be phased for delivery to the end of 2029/30
Wastewater enhancement totex (core pathway); MCERTs monitoring at emergency sewage pumping station overflows	LS4.4	May be phased for delivery to the end of 2029/30
Wastewater enhancement totex (core pathway); Increase flow to full treatment	LS4.5	31 March 2025
Wastewater enhancement totex (core pathway); Increase storm tank capacity at STWs - grey solution	LS4.6	31 March 2025
Wastewater enhancement totex (core pathway); Increase storm system attenuation / treatment on a STW - green solution	LS4.7	Sustainable future and Environmental challenges scenarios: 31 March 2040
Wastewater enhancement totex (core pathway); Storage schemes to reduce spill frequency at CSOs etc - grey solution	LS4.8	Sustainable future and Environmental challenges scenarios: 31 March 2040
Wastewater enhancement totex (core pathway); Storage to reduce spill frequency at CSOs etc - green solution	LS4.9	Sustainable future and Environmental challenges scenarios: 31 March 2040
Wastewater enhancement totex (core pathway); Storm overflow - discharge relocation	LS4.10	Sustainable future and Environmental challenges scenarios: 31 March 2040
Wastewater enhancement totex (core pathway); Storm overflow - increase in combined sewer / trunk sewer capacity	LS4.11	Sustainable future and Environmental challenges scenarios: 31 March 2040
Wastewater enhancement totex (core pathway); Storm overflow - sustainable drainage / attenuation in the network	LS4.12	Sustainable future and Environmental challenges scenarios: 31 March 2040
Wastewater enhancement totex (core pathway); Storm overflow - source surface water separation	LS4.13	Sustainable future and Environmental challenges scenarios: 31 March 2040
Wastewater enhancement totex (core pathway); Storm overflow - new / upgraded screens	LS4.16	31 March 2030
Wastewater enhancement totex (core pathway); Nitrogen technically achievable limit monitoring, investigation or options appraisal	LS4.21	31 March 2030
Wastewater enhancement totex (core pathway); Septic tank replacements - treatment solution	LS4.31	31 March 2035
Wastewater enhancement totex (core pathway); Septic tank replacements - flow diversion	LS4.32	31 March 2035
Wastewater enhancement totex (core pathway); Fish outfall screens	LS4.33	No interventions expected
Wastewater enhancement totex (core pathway); Access and amenity for WINEP/NEP only (not covered elsewhere)	LS4.41	No interventions expected
Wastewater enhancement totex (core pathway); Advanced WINEP (not covered elsewhere)	LS4.42	No interventions expected

Resilience expenditure is directly allocated based on the assumptions made in our Long-term strategy model (NES_LTDS9). (LS4.45, LS4.47, LS4.48, LS4.55, LS4.56, LS4.57).

Net Zero costs are directly allocated to LS4.58 from those estimated in our Long-term strategy model (NES_LTDS9).

LS4a-LS4m expenditure all years

For tables LS4a – LS4m we have allocated the additional costs relative to the core pathway from our modelled totex overlays as set out in Table 4. Where an overlay is allocated to more than one line, it is split across those lines in accordance to the share of expenditure of each of those lines in 2025-30, subject to the restrictions on the last date enhancement expenditure is allowed set out in **Error! Reference source not found.**. Table 4 also specifies how the totex overlays map to the alternative investment pathways set out in section 3.9 and 3.10 in our Long-term strategy (NES_LTDS).

TABLE 4: ALLOCATION OF TOTEX OVERLAYS TO EXPENDITURE LINES - WASTEWATER

Table	Alternative pathway	Totex overlay	Line references (s)
LS4a	7B	Environment – DWMP pathway 1: Accelerate delivery of SODRP by 2040	LS4a.10 LS4a.11 LS4a.12 LS4a.13 LS4a.14 LS4a.15 LS4a.16
LS4b	7C	Environment – DWMP pathway 2: Delay delivery of SODRP	LS4b.10 LS4b.11 LS4b.12 LS4b.13 LS4b.14 LS4b.15 LS4b.16
LS4c	7Xii	Environment – DWMP pathway 4: Increase surface water separation in line with RCP2.6	LS4c.16
LS4d	8B	Environment – future environmental challenges – wastewater	LS4d.20
LS4e	9B	Environment – Technology step change – wastewater Resilience – additional cyber resilience – wastewater	LS4e.16 LS4e.60
LS4f	10B	Environment – Reduction in storm overflow costs from monitoring data	LS4f.16
LS4g	11B	Resilience – Bioresources – benign – wastewater	LS4g.48 LS4g.50
LS4h	11C	Resilience – Bioresources – adverse – wastewater	LS4h.48 LS4h.50
LS4i	12B	Resilience – 80% increase in asset health expenditure - wastewater	LS4i.58
LS4j	12C	Resilience – 123% increase in asset health expenditure - wastewater	LS4j.58
LS4k	13B	Net Zero – accelerated pathway - wastewater	LS4k.61
LS4l	13C	Net Zero – delayed pathway – wastewater	LS4l.61

We do not include a table for pathway 7Xi (Environment – DWMP pathway 3: Increase surface water separation in line with RCP8.5) as although this is included in the DWMP as a separate pathway, the core pathway already includes investment to deliver surface water separation required in line with the RCP8.5 climate change scenario. This pathway therefore does not result in a change in expenditure.

Explanation of the reasons for using the additional lines

Additional cost lines are used to align with tables CW3 and CWW3.

In table LS3p an additional line is used to capture expenditure on addressing air pollution.

Additional commentary

We set out the dates for the decision years (LS3x.1, LS4x.1) and most likely trigger years (LS3x.2, LS4x.2) in NES_LTDS section 3.10: Alternative pathways.

We explain our methodology for determining the likelihood for scenarios and alternative pathways (LS3x.3, LS4x.3) in NES_LTDS section 5.2: Probability assessment of scenarios. We have not devised an evidence based approach to assessing the probability of each alternative pathway needing to be followed, and so have applied a broad range of 5% - 95% likelihood for all alternative pathways. This is intended to represent that these are all considered plausible but not certain pathways. If Ofwat would find it useful for us to estimate relative probabilities we will do so, but have not included this in this submission as we consider it would present a spurious level of accuracy of our ability to predict the future.

We have made an adjustment in our Long-term strategy model (NES_LTDS9) in the year 2025/26 to include funding for transition and accelerated expenditure in 2023/24 and 2024/25. This simplifying assumption enables the model to capture the bill impact of this expenditure. The adjustments are presented in Table 5. This expenditure is included in tables LS3 and LS4 in the year the expenditure is incurred- and is presented in tables CW12, CW17, CWW12 and CWW17.

TABLE 5: MODELLED TOTEX ADJUSTMENTS FOR TRANSITION EXPENDITURE

Investment area	Adjustment (£m totex)
Ensuring sustainable water supplies – water	35.114
Environment – water	0.052
Environment – wastewater	56.515

Our Long-term strategy model calculates the base cost additions and the consequent impact on customer bills for growth. See the 'Base calcs' tab in the Long-term strategy model (NES_LTDS9). As a simplifying modelling assumption and to avoid double counting the impact of growth costs on customer bills, we have excluded the costs for growth related enhancements from our modelling, including for transition expenditure in 2023/34 and 20224/25.

The scenarios assume varying levels of productivity improvement as specified in LTDS1 annex 2: Plausible futures scenario analysis and annex 3: Common reference scenario analysis. The impact of productivity improvements (frontier shift) have been stripped out of the figures for these tables, consistent with the guidance for CW3 and CWW3, which the guidance requires these tables to be consistent with.

In our Long-term strategy model (NES_LTDS9) we only apply an adjustment for real price effects to base costs, and so real price effects are excluded from the costs in these tables.

4. LS5

Explanation of which adaptive pathways are followed under each scenario. Where company-specific scenarios are listed, companies should explain the factors being tested by the scenario or set out where this information can be found in the Long-term strategy document.

Section 3.10: Alternative pathways in our Long-term strategy (NES_LTDS) summarises which decision and trigger points are followed under each scenario.

Annex 2: Plausible futures scenario analysis and Annex 3: Common reference scenario analysis in our Long-term strategy annexes (NES_LTDS1) describes for each scenario:

- The purpose of the scenario;
- Key assumptions;
- Sensitivity of the core pathway to the scenario;
- Adaptation under the scenario: decision and trigger points and alternative pathway followed;
- Impact on long-term outcomes, and
- Customer impact.

The common reference scenarios are included in our Long-term strategy model (NES_LTDS9) that forms part of our submission. The model specifies totex 'overlays' that vary enhancement expenditure for each scenario in the 'Inputs' tab and the overlays that apply in each scenario are specified in the 'scenario inputs' tab.

Additional commentary

This table is presented consistently with table LS3, with the impact of productivity growth (frontier shift) removed.

However, we consider the impact of the difference in productivity growth between scenarios is an important factor. The expenditure for each scenario including the impact of productivity growth can be found in our Long-term strategy model (NES_LTDS9) in the 'Totex for scenarios' tab in lines 5 to 18 for water and 25 to 38 for wastewater.

In our Long-term strategy model (NES_LTDS9) we only apply an adjustment for real price effects to base costs, and so real price effects are excluded from the costs included in these tables.

We have presented the data to 3 decimal places, but have not reduced the number of significant figures presented, as to do this on a basis consistent with the guidance for table LS3 would result in significant loss of information.

5. LS6

Explanation of which adaptive pathways are followed under each common reference scenario. Where company-specific scenarios are listed, companies should explain the factors being tested by the scenario or set out where this information can be found in the long-term delivery strategy document.

As for table LS5 above.

Additional commentary

This table is presented consistently with table LS4, with the impact of productivity growth (frontier shift) removed.

However, we consider the impact of the difference in productivity growth between scenarios is an important factor. The expenditure for each scenario including the impact of productivity growth can be found in our Long-term strategy model (NES_LTDS9) in the 'Totex for scenarios' tab in lines 5 to 18 for water and 25 to 38 for wastewater.

In our Long-term strategy model (NES_LTDS9) we only apply an adjustment for real price effects to base costs, and so real price effects are excluded from the costs included in these tables.

We have presented the data to 3 decimal places, but have not reduced the number of significant figures presented, as to do this on a basis consistent with the guidance for table LS4 would result in significant loss of information.

6. LS7

Companies should include their bill calculations, demonstrating how they have followed our approach to calculating long-term bill impacts.

We have included our Long-term strategy model in our submission (NES_LTDS9). The model includes our bill calculations. Please see the Cover tab in the model for an overview.

Where relevant, companies should clearly state the long-term bill impact associated with DPC schemes as well as documenting key assumptions.

We do not have any existing DPC schemes or DPC planned for AMP8.

As described in our Long-term strategy (NES_LTDS) we intend to explore DPC delivery for any large and separable water resource expenditure in future. However, for the purposes of modelling long-term bill, we have assumed all future investment is funded through the standard route, ie by including it in our RCV and funding via our customers' bills in line with Ofwat's guidance.

Additional commentary

The effects of productivity improvements (frontier shift) and real price effects (for base labour costs only) are included in the bill calculations.

We have different bills for customers in our North East and Essex & Suffolk regions. We have therefore included two versions of LS7 in our submission – one for the bills for all customers in the North East (LS7_NW) and one for water only customer bills in Essex & Suffolk (LS7_ESW).

We have included bill estimates for our core pathway and our five plausible futures scenarios. These bill estimates include the impact of productivity growth (frontier shift) and real price effects (for labour).

The impact on bills under the common reference scenarios can be found in our Long-term strategy model (NES_LTDS9) on the 'Bills summary' tab.